

REMARKS

Applicant respectfully traverses and requests reconsideration.

The Examiner has requested the prior art described by Applicant's Fig. 3. However, as understood, Fig. 3 is believed to represent known prior art but no documentation is apparently available. However, if the Examiner needs to repeat the request, Applicant can attempt to make further efforts in an attempt to obtain more information.

The Abstract has been objected to and has been amended. Accordingly, Applicant respectfully requests that this objection be withdrawn.

The drawings have been objected to because of the connection between element 604 and the "XO" line is missing. Applicant has amended Fig. 6 and enclose a replacement sheet for this Figure.

Claims 1-19 stand rejected under 35 U.S.C. §112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, it is alleged that there is not sufficient detail in the steps or apparatus as they allegedly only recite a portion of the methodology required for the apparatus to become operational. In particular, it is alleged that the claims fail to recite the necessary detail physical structures to provide the "output value exponent". Applicant has amended claims 1, 8, and 14 and as such, Applicant respectfully requests that this rejection be withdrawn.

As to claims 13 and 14, Applicant has also corrected the typographical errors.

Claims 1-13 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. It is alleged that the method steps can be practiced mentally in conjunction with pen and paper and that the means plus function claims (claims 8-13) is alleged that the means plus function are functions to perform data. Applicant respectfully submits that this rejection should be withdrawn.

For example, claim 1 states "in a graphics processing circuit" as such the claim method steps cannot be practiced mentally in conjunction with pen and paper as a graphics processing

circuit must carry out the operations. In any event, Applicant has amended the claims and respectfully requests that the rejection be withdrawn.

Applicant also respectfully requests reconsideration as to claim 8 since it requires, among other things, means for combining a point value stored in memory with a slope value stored in memory in a derived second portion of the mantissa to provide the output mantissa. Such a combining means as described in the specification may include a plurality of adders or suitable multipliers to provide in a unique manner approximated output values of a function based on Lagrange polynomial. Accordingly, this claim is believed to provide sufficient structure and to be distinguishable over other structure that attempts to accomplish this same goal.

In any event, claims 8-13 have also been suitably amended.

Claims 1, 3-8, 10-14 and 16-19 stand rejected under 35 U.S.C. §102(b) as being anticipated by Noetzel. Noetzel is directed to interpolating memory function evaluation. A memory subsystem holds the parameters of the approximating functions and yields an interpolated function value on each read reference. As to claim 1, the office action cites column 2, line 25 to column 5, line 58 and column 6, lines 6-62. The “A0” and a product of “A1-AD” and multipliers 35-39 are considered by the office action to be the claimed “point value” and the “at least one slope value” respectively.

As best understood, Noetzel appears to teach that the memory unit 7 contains coefficients A0...AD that are output to multipliers 35, 37 and 39 (see for example, column 6, lines 6-20). However, Applicant’s claim 1 and 8 for example require, among other things, point values stored in memory and slope values stored in memory and providing a suitable point value and slope value based on the first portion of an input mantissa. Each stored slope value is based on a Lagrange polynomial approximation of a function. The cited reference appears to merely store coefficients in the memory unit 7 and appears to teach a different structure. Accordingly, the claims are in condition for allowance.

In addition, Applicant's claim combining, using a combining circuit to combine the point value the slope value stored in a table and the second portion of the input mantissa to provide an output mantissa. Such combining from stored point and stored slope values does not appear to be taught or suggested by the cited reference. Accordingly, these claims are in condition for allowance.

Claims 10-14 and 16-19 have been rejected for the same reasons used to reject claims 1 and 3-8.

In addition, claim 14 requires, among other things, memory containing a plurality of point values and a plurality of slope values and means for providing a point value that is stored in the memory and means for providing a slope value stored in the memory to a means for combining. The slope values that are stored in memory are based on a Lagrange polynomial approximation of a function. The combiner then combines the point value the slope value, both stored in the memory and the second portion of the input mantissa to provide the output mantissa. Such structure does not appear to be taught or suggested by the cited portion of the reference and as such, these claims are also believed to be in condition for allowance.

Applicant also submits that the dependent claims are also allowable as providing novel and non-obvious subject matter.

Claims 2, 9 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Noetzel in view of Nakayama. As noted above, Noetzel does not appear to teach the subject matter of the independent claims and as such, these claims are also in condition for allowance.

Claim 2 requires for example, "converting the input value such that the input mantissa is within a predefined range". Although Nakayama may describe a conversion means for converting floating point to fixed point, Applicant claims that the input value is the value that includes the input mantissa and an input exponent. As such, it does not appear that the cited references teach or suggest the claimed invention.

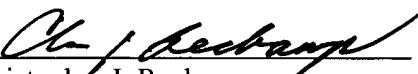
Claims 9-15 are believed to be allowable at least as depending from an allowable base claim.

Accordingly, Applicant respectfully submits that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

Dated: Oct. 6, 2004

By:



Christopher J. Reckamp
Reg. No. 34,414

Vedder, Price, Kaufman & Kammholz, P.C.
222 North LaSalle
Chicago, Illinois 60601-1003
312/609-7500
312/609-5005 Facsimile

Amendments to the Drawings:

The attached drawing sheet includes changes to Fig. 6. This sheet, which includes Fig. 6, replaces the original sheet including Fig. 6. In Fig. 6, the connection between element 604 and the "XO" line has been added.

Attachment: Replacement Sheet